Claims

What is claimed is:

A damper for a gear train that includes an output gear mounted to an output shaft, a first idler gear and a second idler gear mounted to an idler shaft, the first idler gear being disposed between and enmeshed with the output gear and second idler gear, the damper comprising:

an output pulley mounted on an output pulley shaft, the output pulley shaft being axially aligned with the output shaft and connected thereto by a first spline connection;

a second idler pulley mounted to a second idler pulley shaft, the second idler pulley shaft being axially aligned with the idler shaft and connected thereto with a second spline connection;

an endless belt wrapped around the output pulley and the second idler pulley;

a first lubricant fitting connecting a first supply of lubricant to the first spline connection; and

a second lubricant fitting connecting a second supply of lubricant to the second spline connection.

2. The damper of claim 1 wherein the first and second lubricant supplies are the same.

3. The damper of claim 1 wherein the first and second lubricant supplies are pressurized.

4. The damper of claim 1 including a tensioner which engages the belt.

5. The damper of claim 4 wherein the tensioner includes a tensioner pulley that engages the belt.

6. The damper of claim 5 wherein the tensioner pulley is connected to a tension arm that is connected to one of the output and second idler pulleys.

7. The damper of claim 5 wherein one of the output and second idler pulleys is connected to a shield and the tensioner pulley is connected to a tensioner arm that is connected to the shield.

8. The damper of claim 6 including a jack screw that engages the tensioner arm.

9. A dampened gear train comprising:

an output gear mounted to an output shaft, the output shaft extending through the output gear and includes a distal end having a first female splined hole,

a second idler gear mounted to an idler shaft, the idler shaft extending through the second idler gear and has a distal end that having a second female splined hole,

an output pulley mounted to a splined cam pulley shaft that extends into the first splined female hole,

a second idler pulley mounted to a splined second idler pulley shaft that extends into the second splined female hole,

a first idler gear disposed between and enmeshed with the output and second idler gears,

an endless belt wrapped around the output and second idler pulleys,

a first lubricant fitting connected to the distal end of the output shaft for supplying lubricant to the first splined female hole,

a second lubricant fitting connected to the distal end of the idler shaft for supplying lubricant to the second splined female hole.

10. The dampened gear train of claim 9 wherein the first and second lubricant fittings are connected to at least one pressurized lubricant supply.

11. The dampened gear train of claim 9 wherein the first splined female hole has a closed end in communication with a first bleed port.

12. The dampened gear train of claim 9 wherein the second splined female hole has a closed end in communication with a second bleed port.

13. The dampened gear train of claim 9 including a tensioner which engages the belt.

14. The dampened gear train of claim 13 wherein the tensioner includes a tensioner pulley that engages the belt.

15. The dampened gear train of claim 14 wherein the tensioner pulley is connected to a tensioner arm that is connected to one of the output and second idler pulleys.

16. The dampened gear train of claim 14 wherein one of the output and second idler pulleys is connected to a shield and the tensioner pulley is connected to a tensioner arm that is connected to the shield.

17. The dampened gear train of claim 15 including a jack screw that engages the tensioner arm.

18. The dampened gear train of claim 9 wherein the output shaft is connected to an output of a fuel injection pump.

19. A method of dampening a gear train that includes an output gear mounted to an output shaft, a first idler gear and a second idler gear mounted to an idler shaft, the first idler gear being disposed between and enmeshed with the output gear and second idler gear, the method comprising:

providing an output pulley mounted on an output pulley shaft, the output pulley shaft being axially aligned with the output shaft and connected thereto by a first spline connection;

providing a second idler pulley mounted to a second idler pulley shaft, the second idler pulley shaft being axially aligned with the idler shaft and connected thereto with a second spline connection;

providing an endless belt wrapped around the output pulley and the second idler pulley;

providing a first lubricant fitting connecting a first supply of lubricant to the first spline connection;

providing a second lubricant fitting connecting a second supply of lubricant to the second spline connection; and

injecting lubricant into the first and second spline connections through the first and second lubricant fittings respectively.

20. The method of claim 19 including:

providing a tensioner which engages the belt; and

applying tension to the belt by applying a force to the tensioner.

21. The method of claim 22 wherein the tensioner includes a tensioner pulley that engages the belt, wherein the tensioner pulley is connected to a tensioner arm that is connected to one of the output and second idler pulleys and the tensioner arm engages a jack screw and the force is applied to the tensioner arm by rotating the jack screw.